GOTHIC DETAILS FROM YORK CATHEDRAL.

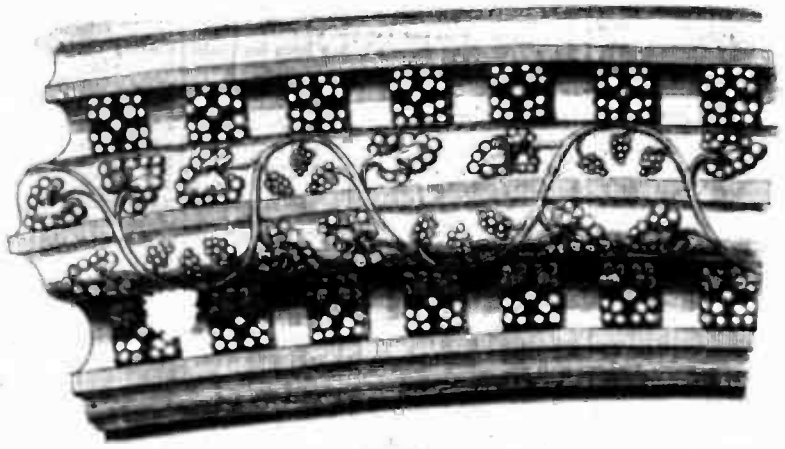


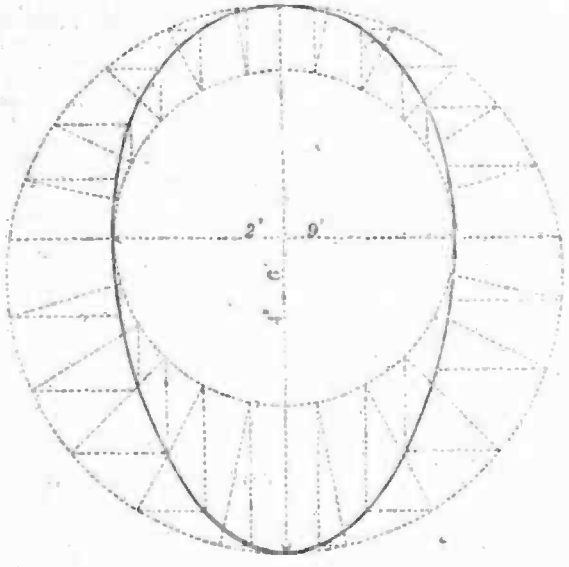
Fig. 20.

MODE OF OBTAINING EGG FORM FOR SEWERS.

Sir,—As it is a subject of some little professional interest, I have spoilt a pennyworth of time in making a few inquiries, and have found that "A. B. C." is wrong in calling the Walbrook sewer *egg shaped*. It is not so, but only approximates to that form, as may be seen by any one who may choose to crawl into the mouth. Its dimensions are 6 feet 6 inches high, 4 feet 6 inches wide at the top, and 4 feet wide at the bottom. The arch and the invert are both as nearly semicircular as they can in such a section be made, but the sides are straight lines (?)

Neither is Mr. Roe's section, nor is that proposed by Mr. Phillips, *egg-shaped*. They are only nearer approximations than those used in the city, for they are specially directed to be struck with compasses from defined centres; and you well know, Sir, that forms so described are necessarily untrue; such lines do not, and cannot flow smoothly into each other.

Herewith is sent an egg-shaped section, adapted to a height of 4 feet 6 inches, and main width of 2 feet 9 inches, struck upon that true principle, which at once manifests itself to the eye. The bounding line cuts through ordinates obtainable at as many points as judgment or caprice may determine.



Upon the same principle, any kind of egg-shape (for the eggs of different birds differ much in form) or any ellipsis may be traced. But although none of your numerous correspondents have stumbled upon it, this is no new discovery; it was pointed out by *Serlio*, a few days before yesterday. Anent the best form of sewer. Is it not upon record, is it not notorious, that in all the metropolitan commissions, excepting that of Westminster, who are old-fashioned Car. 2. Act of Parliament—sewer builders, and who have not, until lately, dared to depart from the legislative wisdom of their country, that, beyond the memory of most men now living, semicircular bottoms have been used? Does not every bricklayer's labourer know it as a grandfather's story? Has it not been put upon record that such things appear to have been used by the architect of "the Horse-guards?" And, after all, in what amount of perfection does the egg-shaped sewer exceed the oblong?

The same kind of reasoning which assumes the one to be better than the other, would prove, not only that a parabolic or hyperbolic curve is preferable to the oviform, but that a lancet arched, or even an acutely triangular invert, is better than either. If we, on the contrary, take the plea of the Westminster folk, "that segment bottoms are more convenient for walking in," to be of very great importance, that will, if carried a little farther, demonstrate the good old Roman flat bottom to be still more perfect.

Truth to say, each form has its advantages, and I am only surprised that one convenience of a segment bottom, long since remarked by an engineer of no mean note, when advocating its superiority over the (semicircle, has not been publicly paraded. "If the bottom should be washed out, you can more readily and at less cost put in another, for your walls would not need support, two-thirds of them resting upon the earth," and, considerately reflecting upon the erosive power of running water, who is to say that a semicircular bottom will not in process of time be cut through? Are not some of the oldest semicircular inverts beginning to yield to the internal enemy?

Doubtless this will sound like a very heterodox notion now-a-days; but I do happen to know from an ear witness, that before a Committee of Inquiry of the House of Commons into the subject of sewage, one of the most eminent and largely experienced inquirers of the present day, himself well-practised in sewage, and knowing well that segment bottoms and upright walls were used in the district, said deliberately: "I consider the Westminster Commission to be head-quarters for all information with respect to sewers;" we, therefore, must not be much surprised at little doctors differing from little doctors, when such big-wigs have their odd fancies.

I cannot but think, Sir, that if you were to obtain all the reports of the respective metropolitan commissions in reply to the sweeping condemnation of the poor-law secretary, you would find something in them wherewith to refresh the public memory.

It is all very well to cry quack, quack, quack, and then to fancy that the wealth of heaven is to pour down at one's screaming; but I dare say that your correspondents E. E. E. and A. B. C. will be somewhat edified by reading at least Mr. Gwilt's sad confession, that once, and once only, when he was a much younger man, he did perpetrate an egg-shaped sewer, of which he was ever afterwards most heartily ashamed; and his experience and his opinions are not those of an every-day man, albeit he does not dub himself "civil engineer."

What are the sections of the Roman cloaca maxima, and of the emissarium of the Alban Lake? Did they not answer their purpose? What are the sections of Sir Christopher Wren's sewers under St. Paul's? Was he no mathematician? Did he know nothing of the laws obeyed by running water? Who made streamlets and mighty rivers? Are their channels portions of an *egg-shape*?

Again, Sir, we are told that egg-shaped sewers are stronger than any others. Your professional readers well know that form alone will not give strength—good materials and good workmanship are the main requisites of any structure which aims at durability; and had these been more attended to, we should have heard much less of mere form.

The world does talk of the necessity of all sewer builders being civil engineers, and being certificated as such. Will you allow an old man to tell you a little story, once punched into his napper-case, and now brought into recollection by poor old Dowley and his man

To learn about OCR and PDF Compression, visit TheParanoidOffice.org